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10 CFR 50.73

June 10, 2009
RA-09-046

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555 - 0001

Oyster Creek Nuclear Generating Station
Facility Operating License No. DPR-16
NRC Docket No. 50-219

Subject: Licensee Event Report (LER) 2009-003-00, Manual Reactor Shutdown Caused by Loss of Cooling to the Main Transformer

Enclosed is Licensee Event Report 2009-003-00, Manual Reactor Shutdown Caused by Loss of Cooling to the Main Transformer. This event did not affect the health and safety of the public or plant personnel. This event did not result in a safety system functional failure. There are no new regulatory commitments made in this LER submittal.

If any further information or assistance is needed, please contact James Barstow, Regulatory Assurance Manager at 609-971-4947.

Sincerely,

T.S. Rausch
Vice President, Oyster Creek Nuclear Generating Station

Enclosure: NRC Form 366, LER 2009-003-00

cc: Regional Administrator, USNRC Region I
USNRC Project Manager, Oyster Creek
USNRC Senior Resident Inspector, Oyster Creek
File No. 09054

IE22
NRR

NRC FORM 366 (9-2007) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 08/31/2010

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
Oyster Creek, Unit 1	05000219	1 OF 3

4. TITLE
Manual Reactor Shutdown Caused by Loss of Cooling to the Main Transformer

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
									N/A	N/A
04	25	2009	2009	- 003 -	00	6	10	2009	FACILITY NAME: N/A	DOCKET NUMBER: N/A

9. OPERATING MODE
N

10. POWER LEVEL
100

11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: *(Check all that apply)*

- ☐ 20.2201(b)
- ☐ 20.2201(d)
- ☐ 20.2203(a)(1)
- ☐ 20.2203(a)(2)(i)
- ☐ 20.2203(a)(2)(ii)
- ☐ 20.2203(a)(2)(iii)
- ☐ 20.2203(a)(2)(iv)
- ☐ 20.2203(a)(2)(v)
- ☐ 20.2203(a)(2)(vi)
- ☐ 20.2203(a)(3)(i)
- ☐ 20.2203(a)(3)(ii)
- ☐ 20.2203(a)(4)
- ☐ 50.36(c)(1)(i)(A)
- ☐ 50.36(c)(1)(ii)(A)
- ☐ 50.36(c)(2)
- ☐ 50.46(a)(3)(ii)
- ☐ 50.73(a)(2)(i)(A)
- ☐ 50.73(a)(2)(i)(B)
- ☐ 50.73(a)(2)(i)(C)
- ☐ 50.73(a)(2)(ii)(A)
- ☐ 50.73(a)(2)(ii)(B)
- ☐ 50.73(a)(2)(iii)
- ☒ 50.73(a)(2)(iv)(A)
- ☐ 50.73(a)(2)(v)(A)
- ☐ 50.73(a)(2)(v)(B)
- ☐ 50.73(a)(2)(v)(C)
- ☐ 50.73(a)(2)(v)(D)
- ☐ 50.73(a)(2)(vii)
- ☐ 50.73(a)(2)(viii)(A)
- ☐ 50.73(a)(2)(viii)(B)
- ☐ 50.73(a)(2)(ix)(A)
- ☐ 50.73(a)(2)(x)
- ☐ 73.71(a)(4)
- ☐ 73.71(a)(5)
- ☐ OTHER

Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME	TELEPHONE NUMBER *(Include Area Code)*
James Barstow, Regulatory Assurance Manager	(609) 971-4947

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX
X	EL	CNTR	G080	Y	X	EL	XFMR	G080	Y

14. SUPPLEMENTAL REPORT EXPECTED

☐ YES *(If yes, complete 15. EXPECTED SUBMISSION DATE)* ☒ NO

15. EXPECTED SUBMISSION DATE

MONTH	DAY	YEAR
N/A	N/A	N/A

ABSTRACT *(Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)*

On April 25, 2009, with the unit at 100% power, loss of cooling to the Main Power Transformer M1A resulted in a manual plant scram. The loss of cooling was caused by a faulted cooling bank motor starter, resulting in the failure of the M1A auxiliary control power transformer and subsequent loss of control power for the remaining cooling bank motor starters. A reactor load reduction was commenced in accordance with the alarm response procedure to maintain M1A temperatures below the alarm set points. While reactor power was being reduced, transformer operation was limited to 30 minutes without forced cooling. Operations secured the power reduction and manually scrammed the reactor from 74% power in accordance with plant procedures. The post scram response was normal and the required notifications were made.

All safety systems operated as expected following the reactor scram.

There were no safety consequences impacting plant or public safety as a result of this event.

This event is being reported pursuant to 10CFR50.73(a)(2)(iv)(A) due to manual actuation of the reactor protection system.

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NARRATIVE

Plant Condition Prior to Event

Event Date: April 25, 2009 Event Time: 1715
Unit 1 Mode: Power Operation Power Level: 100%

Description of Event
Note: Energy Industry Identification System (EIIS) codes are identified in the following text in brackets as [XX].

On April 25, 2009, at 1715, alarms (M1A CLG POWER FAIL) and (M1A TROUBLE) were received in the control room while the M1A Main Power Transformer [XFMR] temperatures began to trend up. Operators were dispatched to the field to investigate and reported that there was smoke in the M1A control panel but no active fire. All the M1A pumps [P] and fans [FAN] were off and could not be restored. The Shift Manager was notified and a reactor load reduction was commenced in accordance with the alarm response procedures to maintain M1A temperatures below the alarm set points. While reactor power was being reduced, the decision was made to limit M1A service to 30 minutes without forced cooling. Operations secured the power reduction and manually scrammed the reactor from 74% power in accordance with plant procedures. The post scram response was normal and the required notifications were made.

Analysis of Event:

This event is reportable under the provisions of 10CFR50.73(a)(2)(iv)(A) as an event that resulted in a manual actuation of the reactor protection system [JC]. There were no safety consequences impacting the plant or public safety as a result of this event. All safety systems, structures, and components operated normally during this event.

During the reactor shutdown, all required safety systems responded appropriately. There was no loss of any function that would have prevented fulfillment of actions necessary to (1) shutdown the reactor and maintain it in a safe shutdown condition, (2) remove residual heat, (3) control the release of radioactive material, and (4) mitigate the consequences of an accident.

This event did not result in any safety system functional failure.

Cause of Event:

The loss of M1A cooling was caused by a faulted contactor coil [CNTR] in the cooling bank [CLR], motor starter [MSTR], resulting in the failure of the M1A auxiliary control power transformer [XFMR], and subsequent loss of control power for the remaining cooling bank motor starters. At the time of the event, there were no surveillances or work in progress. Although troubleshooting found an incorrect rated fuse installed for protection of the control power transformer, the faulted motor starter contactor coil would have still resulted in a loss of all M1A cooling.

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NARRATIVE

Corrective Actions:

The M1A Main Power Transformer, replaced in February 2009, was supplied to Oyster Creek from the Eddystone Generating Station. There is no pertinent equipment history information for this auxiliary control power transformer or the motor starter, contactor coil. The control power transformer and the #1 cooling bank motor starter assembly were replaced, properly rated fuses were installed, and the cooling system control circuitry was modified to have a backup independent power supply to address a single point vulnerability. In order to prevent future similar failures and eliminate another single point vulnerability, modifications were performed for the cooling circuits on both Main Power Transformers (M1A and M1B). These modifications added individual fuses for each cooling group and coordinated the rating of the control power fuses such that only one cooling group circuit is lost on an electrical fault within that same cooling group circuitry.

The plant returned to power operation on March 2, 2009.

Additional enhancements were incorporated into the Alarm Response Procedures. Guidance was provided for the maximum allowable operation time for a total loss of cooling to the main transformers and actions to take in an attempt to restore cooling power.

Previous Occurrences

There have been no similar Licensee Event Reports events at Oyster Creek in the last three years, involving a loss of a main transformer's cooling system leading to a reactor scram.

Component Failure Data

Component: Motor Starter (CR106C002AA with a 15D21G2 contactor coil)
Manufacturer: GE (Supplied with the main transformer from the Eddystone Generating Station)
Serial No: N/A
Cause: Faulted (shorted coil)

Component: Control Power Transformer (460/115 VAC, 0.500KVA – MOD# 9T55Y50)
Manufacturer: GE (Supplied with the main transformer from the Eddystone Generating Station)
Serial No: N/A
Cause: Overload failure of its windings